

Comment on the draft proposal to emend the Code with respect to trace fossils
(Proposal; see BZN 60: 141–142)

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The comment by Bertling et al. suggests that the Code's provisions relating to ichnotaxa (taxa based on fossils of animal 'works') need emending, but it is based on definitions of 'work of an animal', 'ichnotaxon' and 'trace fossil' (see their para. 2) which differ from the meanings in the Code. When the meanings given in the Code Articles and Glossary are used, the supposed difficulty disappears and there is no need for a Code emendment.

Article 1.2.1 states that the Code applies to 'names based on the fossilized work of organisms (ichnotaxa), . . .', and in the Glossary 'work of an animal' is defined as 'The result of the activity of an animal (e.g. burrows, . . . galls, . . . nests, . . . cocoons, . . . tracks), but not part of the animal. The term applies to trace fossils (see ichnotaxon) . . .'. Article 42.2.1 refers to 'names for trace fossils (ichnotaxa)'. Under Article 72.5.1, 'an example of the fossilized work of an animal' is eligible to be the name-bearing type of a nominal taxon. Contrary to the interpretation of Bertling et al. names based on fossilized galls, cocoons, etc. *are* ichnotaxa, exactly like those based on fossilized tracks. All these fossils, not of animals themselves but resulting from their activities, are commonly called trace fossils.

The confusion perhaps arises from the Glossary, where an ichnotaxon is said to be 'A taxon based on the fossilized work of an animal, including fossilized trails, tracks or burrows (trace fossils) made by an animal'. This wording (carried forward from the previous edition of the Code) does confirm that taxa based on fossil galls, cocoons etc. are ichnotaxa, but it should not be interpreted to mean that such specimens cannot be called trace fossils. However, since the present authors have had doubts it would have been better if '(trace fossils)' had been placed before the first comma, or even omitted altogether, so that the term could not be thought to have a very restricted meaning. Comparison of Articles 1.2.1 and 42.2.1 (see above) shows that 'fossilized works of animals' and 'trace fossils' are synonymous and that nominal taxa based on such material are ichnotaxa.

Bertling et al. propose (para. 3) to define 'work of an animal' as 'trace fossils (including burrows, . . . nests) as well as secretions such as eggs, . . . pupal cases, . . . and plant galls'. However, 'works' do not have to be fossil. Eggs (and most pupal cases) are not secretions (nor indeed are plant galls), but are life stages or parts of animals, not 'works': nominal taxa based on their fossils are not ichnotaxa but are subject to all the normal provisions of the Code (see Article 17.3). The present definition is both shorter and more accurate.

Bertling et al. (para. 4) refer to the nomenclatural treatment of ichnofamilies, and say that criteria for their establishment should not differ from those of other ichnotaxa. There are in fact no such special criteria. In particular, it is recommended that the principle of typification should be extended to ichnofamilies. However, this principle already applies in the usual way, since Articles 29 and 63 apply to the typification and formation of ichnofamilies exactly as to other family taxa. The only

difference between ichnofamilies and 'normal' families lies in Article 23.7.3, which states that names established for an ichnotaxon [at any rank] do not compete in priority with names based on animals themselves.

A further point made by Bertling et al. is that Article 1.3.6 should be revoked; this allows the availability of names established before 1931 that were based on the 'work' of extant (i.e. not extinct) animals. It should however be noted that these non-fossil names do not relate to ichnotaxa and are subject to the Code's normal provisions. The authors state that they are not aware of any such names that are in use: nor am I, but this does not mean that they do not exist! As Bertling et al. say, any names that have passed out of use can be dealt with under the Code in the usual way. The revocation of Article 1.3.6 would also affect other provisions (such as Article 23.3.2.3), and it might raise unforeseen problems of homonymy. As a general principle it is rash to revoke or emend any Code provision unless there is a clear need to do so and the consequences have been taken into account.

Bertling et al. have formed the impression that the Code draws a distinction between fossilized tracks and other 'works' such as galls, coprolites and nests. This is not the case (and the previous edition used the same wordings). I might add that during the formulation of the present Code, many ichnologists made suggestions, and these led inter alia to the requirement that after 2000 new ichnogenera must have a type species (Articles 13.3.3, 66.1). I do not believe that Bertling et al. have demonstrated the need for any changes to the Code's provisions, but it would be helpful if future editions were to include a Glossary entry for 'trace fossil', making it clear that the term is synonymous with 'fossilized work of an animal'. As a member of the former Editorial Committee, I regret that this omission was overlooked during the revision of the Glossary.

In conclusion, I should stress that the references to trace fossils in the Code relate to the works only of *animals* since the remit of the Commission is restricted to zoological nomenclature. The word 'organisms' was used in Article 1.2.1 because the nature of the agent responsible for a trace fossil is often not obvious; if the agent is known not to be animal the Code does not apply.

Comments on the neotypification of Protists, especially Ciliates (Protozoa, Ciliophora)

(General Article; see BZN 59: 165–169; 60: 48–49, 143)

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As the Managing Editor of the *European Journal of Protistology*, I support Wilhelm Foissner's proposal. In his paper, Foissner has written in favour of the practice of neotypification of species, with good quality type material preserved in ways that portray diagnostic features and lodged in collections that permit re-examination and comparison with other specimens. In almost every issue of our journal we publish papers concerned with the description of species which require comparison with inadequately described and untypified species, many of them